

Atty. Docket No. YOR920000737US1
(590.033)

REMARKS

Please note the fact that November 6, 2004, fell on a Saturday ensures this paper is timely filed as of today, Monday, November 8, 2004 (the next succeeding day which is not a Saturday or Sunday).

Applicants and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. The Office is respectfully requested to reconsider the rejections presented in the outstanding Office Action in light of the following remarks.

Claims 1-25 were pending in the instant application at the time of the outstanding Office Action. Of these claims, Claims 1, 13 and 25 are independent claims; the remaining claims are dependent claims. Claim 18 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which applicants regard as the invention. Claims 1 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Miller et al. (hereinafter "Miller"). Claims 2-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller and in view of Kita et al. (hereinafter Kita). Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Coughlin. Reconsideration and withdrawal of the present rejections is hereby respectfully requested.

The basis for the rejection of Claim 18 is the asserted lack of antecedent basis for the term "step adapted". Applicants have rewritten this claim consistent with the Examiner's interpretation of the claim. The word "step" has been removed from the

Atty. Docket No. YOR920000737US1
(590.033)

phrase "step adapter" to obviate this rejection. This amendment is not in acquiescence of the Examiner's position on the allowability of the claim, but merely to expedite prosecution; no change in scope is intended by Applicants.

When test data for a parser is different in nature than the data on which the parser was trained, the performance of a parser will become worse than that of a matched condition. The present invention thus broadly contemplates adapting statistical parsers to new data. In particular, it is assumed that an initial statistical parser is available and a batch of new data is given. In unsupervised adaptation, however, true parses of the new data are not available. The initial model preferably includes a finite collection of probability mass functions (pmf's). The pmf's are preferably transformed into a new model via Markov matrices. These Markov matrices are preferably obtained by maximizing the likelihood of test data with respect to the decoded parses using the initial model. The adaptation scheme may also be carried out iteratively. (See Page 3, line 15 - Page 4, line 7)

As best understood, Miller appears to be directed to a natural language processing system consisting of three stages of processing: parsing, semantic interpretation, and discourse. (Abstract) Once the parsing model of Miller has been created, the parsing model is searched using an adaptation of the Earley algorithm. (Page 58) Thus in Miller the Earley algorithm (or a modification thereof) is used to search the unchanged parsing model.

The instantly claimed invention requires specifically "adapting the statistical [parsing] model via employing a mathematical transform". (Claim 1, emphasis added)

Atty. Docket No. YOR920000737US1
(590.033)

Similar language appears in the other independent claims. Miller teaches only adapting the algorithm (Earley) used to search the parsing model. There is no teaching or suggestion in Miller of adapting (or modifying) the statistical parsing model itself. Thus, it is respectfully submitted that Miller falls short of the present invention. Accordingly, Applicants respectfully submit that the applied art does not anticipate the present invention because, at the very least, "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under construction." W.L. Gore & Associates, Inc. v. Garlock, 721 F.2d 1540, 1554 (Fed. Cir. 1983); see also In re Marshall, 198 U.S.P.Q. 344, 346 (C.C.P.A. 1978).

The Office also rejected certain claims under 35 U.S.C. § 103(a) over Miller in combination with various references, asserting "it would have been obvious ... to combine the parsing system of Miller et al. with the Markov calculations as taught by Kita et al." and "it would have been obvious ... [to] implement the parser unit of Miller et al. with the computer program of Coughlin". Applicants respectfully traverse these rejections.

The rejection over the combination of Miller and Kita appears to be based on a misunderstanding of a Hidden Markov Model and a Markov Transform. Despite sharing a common word ("Markov"), the Hidden Markov Model of Kita is not the Markov Transform of the present case. The Hidden Markov Model of Kita refers to a random process used to model human speech. In the present case, a Markov Transform has nothing to do with a random process. Rather, it is a particular mathematical form that is particularly suitable for modifying an existing statistical parser so that the modified

Atty. Docket No. YOR920000737US1
(590.033)

model better fits new data. In fact, the use of a Markov Transform is one embodiment of the present invention. (See Page 3, lines 15-17; “[i]n accordance with at least one presently preferred embodiment of the present invention, an arrangement is contemplated for adapting statistical parsers to new data using Markov transform.”) It is respectfully submitted this rejection should be withdrawn.

Coughlin in combination with Miller also does not overcome the deficiencies of Miller discussed above. A 35 U.S.C. § 103(a) rejection requires that the combined cited references provide both the motivation to combine the references and an expectation of success. There is, however, absolutely no teaching or suggestion in Coughlin that would lead one of ordinary skill in the art to modify Miller to arrive at the present invention. Moreover, actually combining the teachings of Miller and Coughlin would not result in the present invention as the present invention specifically requires “**adapting the statistical [parsing] model via employing a mathematical transform**”. (Claim 1, emphasis added).

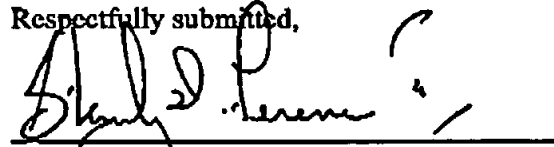
By virtue of dependence from what are believed to be allowable independent Claim 1 and 13, it is respectfully submitted that Claims 2-12 and 14-24 are also presently allowable.

The “prior art made of record” has been reviewed. Applicants acknowledge that such prior art was not deemed by the Office to be sufficiently relevant as to have been applied against the claims of the instant application. To the extent that the Office may apply such prior art against the claims in the future, Applicants will be fully prepared to respond thereto.

Atty. Docket No. YOR920000737US1
(590.033)

In summary, it is respectfully submitted that the instant application, including Claims 1-25, is presently in condition for allowance. Notice to the effect is earnestly solicited. If there are any further issues in this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Stanley D. Ference III
Registration No. 33,879

Customer No. 35195
FERENCE & ASSOCIATES
400 Broad Street
Pittsburgh, Pennsylvania 15143
(412) 741-8400
(412) 741-9292 - Facsimile

Attorneys for Applicants